





Article

The Nexus between Green Transformational Leadership, Employee Behavior, and Organizational Support in the Hospitality Industry

Ibrahim A. Elshaer ^{1,2,*} , Alaa M. S. Azazz ^{3,4,*} , Yahdih Semlali ¹ , Mahmoud A. Mansour ²,
Mohammed N. Elziny ⁵ and Sameh Fayyad ^{2,6} 

¹ Department of Management, College of Business Administration, King Faisal University, Al-Ahsaa 380, Saudi Arabia; ysemlali@kfu.edu.sa

² Hotel Studies Department, Faculty of Tourism and Hotels, Suez Canal University, Ismailia 41522, Egypt; mahmoud_mansor@tourism.suez.edu.eg (M.A.M.); sameh.fayyad@tourism.suez.edu.eg (S.F.)

³ Department of Social Studies, Arts College, King Faisal University, Al-Ahsaa 380, Saudi Arabia

⁴ Tourism Studies Department, Faculty of Tourism and Hotels, Suez Canal University, Ismailia 41522, Egypt

⁵ Hotel Management Department, Faculty of Tourism and Hotel Management, Helwan University, Cairo 11771, Egypt; mohamed.nagy@fth.helwan.edu.eg

⁶ Hotel Management Department, Faculty of Tourism and Hotels, October 6 University, Giza 12573, Egypt

* Correspondence: ielshaer@kfu.edu.sa (I.A.E.); aazazz@kfu.edu.sa (A.M.S.A.)

Abstract: This research paper explores the relationship between green transformational leadership (GTL), employee green behavior (EGB), and the mediating role of green organizational support (GOS) in fostering environmentally friendly practices within organizations. Drawing upon Resource-Based View Theory (RBV) and social exchange theory, the study investigates how leaders' behaviors and organizational support influence employees' engagement in pro-environmental initiatives. Using a quantitative research approach, data were collected from a sample of 350 hotel employees through self-administered surveys. CB-SEM was employed to analyze the hypothesized relationships among the variables. The findings indicate a significant positive relationship between GTL and EGB, suggesting that leaders who demonstrate environmentally conscious behaviors and inspire their followers to embrace sustainability principles are more likely to foster green practices among employees. Furthermore, the study reveals that GOS mediates the relationship between GTL and EGB, highlighting the importance of organizational policies, resources, and initiatives in facilitating environmentally responsible actions. These results contribute to the existing literature by shedding light on the mechanisms through which leadership and organizational support can promote sustainability initiatives in the hotel industry. Practical implications for hotels include the importance of fostering a culture of environmental consciousness, providing training and resources to support green initiatives, and empowering leaders to exemplify and promote green behaviors among employees.

Keywords: green organizational support; green behaviors; green transformational leadership; green recycling; green work engagement; green innovation; green service recovery; green knowledge sharing



Citation: Elshaer, Ibrahim A., Alaa M. S. Azazz, Yahdih Semlali, Mahmoud A. Mansour, Mohammed N. Elziny, and Sameh Fayyad. 2024. The Nexus between Green Transformational Leadership, Employee Behavior, and Organizational Support in the Hospitality Industry. *Administrative Sciences* 14: 107. <https://doi.org/10.3390/admsci14060107>

Received: 19 April 2024

Revised: 18 May 2024

Accepted: 20 May 2024

Published: 21 May 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

According to the “Resource-Based View Theory” (RBV), a company’s ability to gain a competitive edge and perform well depends on how it uses its strategic resources, which are valuable, uncommon, and challenging for competitors to copy in the marketplace (Barney 1991). If these strategic resources are difficult for rivals to imitate or replace with less expensive alternatives that can accomplish comparable tasks, the business also gains from improved long-term performance and a continuous competitive advantage (Amit and Schoemaker 1993). Considering the RBV as a guide, leadership is seen as a vital resource for the business’s environmental management (Zhou et al. 2018). Similarly, transformational

leadership is linked to enhanced business performance when organizations innovate to gain a competitive edge and boost productivity (Della Peruta et al. 2018; Donate and Sánchez de Pablo 2015). Transformational leadership (TL) is a leadership approach wherein leaders identify a desired change and motivate their employees to accomplish a goal via higher values like equity, fairness, and autonomy (Avolio et al. 1999). In addition, TL influences transformation and encourages innovative conduct at work (Jiang and Yang 2015).

Regarding the environment, because of the problems caused by global sustainability, organizations need new kinds of leadership that go beyond self-interest and share leadership responsibilities (Begum et al. 2022). Among these kinds to accomplish environmental goals, GTL has gained the greatest momentum (Çop et al. 2021). GTL has prioritized fostering motivation and awareness inside the organization to accomplish environmental objectives (Cahyadi et al. 2022; Chen and Chang 2013). Mittal and Dhar (2016) and Zhou et al. (2018) stated that GTL is a style of leadership in which the primary objective is to inspire, motivate, and supply workers with a distinct vision while also meeting their growth essentials in order to help the organization accomplish its environmental objectives. Furthermore, this concept describes the actions of leaders who encourage individuals to go above and beyond the call of responsibility when it concerns the environment (Kusi et al. 2021). Additionally, using GTL has been shown to improve employee psychology and green organizational performance (Çop et al. 2021). Transformational leadership includes fostering an inventive environment and encouraging, engaging, and motivating employees to trust in their leader or align with their vision, which influences the performance and creativity of the company (Mittal and Dhar 2016; Ng 2017). Moreover, employees' behavior is significantly influenced by the traits and behaviors of their leaders (Mansoor et al. 2021). Consequently, previous research has recommended organizations use GTL, as it fosters a culture of encouragement and motivation among coworkers to adopt eco-friendly job behaviors in order to achieve sustainable performance (Chen and Chang 2013; Çop et al. 2021; Singh et al. 2020).

Even though the crucial role of employee green behaviors in implementing various environmental management strategies in the workplace context (Safari et al. 2018), most organizations focus on organizational improvement and technological advancements (Brammer et al. 2012), disregarding the encouragement and direction of EGB (Lu et al. 2017). Any recognized individual action that advances the goal of environmental sustainability in the workplace is considered "green behavior" by employees (Norton et al. 2015). As a result, organizations cannot achieve their ecological sustainability objectives if the workforce at all levels of management does not engage in green behavior (Hossin et al. 2021). Employee green behaviors may also be described as the degree to which employees participate in green initiatives and go above and above their call of duty (Bissing-Olson et al. 2013). Additionally, these behaviors are proactive activities taken by employees who feel they can improve the environment (Safari et al. 2018). Hence, they are regarded as the basis of environmental sustainability within organizations (Zacher et al. 2023). Employees who engage with environmental concerns within an organization are likely to practice a variety of green behaviors, like green recycling behavior (Bissing-Olson et al. 2013; Safari et al. 2018), green work engagement (Huang et al. 2021), green innovation behavior (Begum et al. 2022; Singh et al. 2020), "green service recovery performance" (Luu 2018), and "green knowledge sharing behavior" (Chang and Hung 2021; Rubel et al. 2021).

Within the framework of motivating employees toward green behaviors, organizational support theory asserts that employees who feel that their organization appreciates and recognizes their efforts have a duty to support the company in accomplishing its goals (Rhoades and Eisenberger 2002). Accordingly, when workers see that their organization respects and appreciates their environmental contributions, i.e., Green Organizational Support (GOS) (Pinzone et al. 2019), they will perform diligently at work and engage in various green behaviors (Rhoades and Eisenberger 2002). By operating organizational support theory, GOS resulting from GTL practices may nourish employees' belief that the organization recognizes and rewards their influential green contributions at work, resulting

in involvement in green behaviors. Thus, GOS can act as a mediator between the mutual relationships in the study model.

This study is critical because it provides a solid framework for hotels, especially those in developing countries, who want to learn how to build their staff members' green organizational behaviors through leadership development. Understanding what leaders can do to support effective green management activities in the hotel industry is becoming increasingly important (Aboramadan et al. 2022). In this context, this study strives to bridge some existing gaps. To begin with, although green leadership approaches are beginning to garner scholarly interest as a possible facilitator of staff green outcomes, hospitality investigations within this area still need to be expanded (Darvishmotevali and Altinay 2022). Furthermore, there has been a scholarly push for a change in focus from looking at the antecedents of eco-friendly organizational results to looking at the antecedents of workers' green behaviors (Luu 2017).

In terms of GOS, it is essential to run GOS as a tool for green leadership, e.g., GTL, to impact green behavioral outcomes in order to establish and maintain sustainable businesses (Aboramadan et al. 2022). Accordingly, we introduce and verify by empirical means a theoretical framework that regards GTL as the essential antecedent to green recycling, green work engagement, green innovation behavior, green service recovery performance, and green knowledge-sharing behavior. Additionally, GOS was utilized as a mediating variable among these correlations. Thus, this study simultaneously examined the effect of GTL and GOS on several green behaviors that had yet to be achieved in previous studies. Furthermore, the existing literature especially concentrates on the direct influence of GTL and GOS on achieving some green behavior. However, a dearth of research considers GOS as a mediator between GTL and the green behavior aspects used in our study. Overall, up until this point, not many studies have been performed to examine GTL, GOS, and the accomplishment of these aspects of green behavior in the context of hotels.

A substantial contribution to the literature has been made by choosing Egypt, a developing nation, and the hospitality industry for the analysis of understudy constructs. Egypt's economy is primarily dependent on tourism. The hospitality industry in Egypt is expanding as Egypt's hospitality industry is predicted to be worth USD 3.78 billion in 2024 and increase at a compound annual growth rate (CAGR) of 4.25% to reach USD 4.65 billion by 2029 (The Egypt Hospitality Industry Report 2024). As for Cairo, the city alone contains 22 five-star hotels, 13 four-star hotels, and 18 three-star hotels. This indicates the huge size of the hospitality sector in this city, which will necessitate the necessity of turning towards greenness to reduce the negative effects of this sector on the environment (The Ministry of Tourism and Antiquities 2024).

Accordingly, the current study aims to examine the direct relationship between GTL and a group of green behaviors—namely green recycling, green work engagement, green innovation behavior, green service recovery performance, and green knowledge-sharing behavior—and GOS, and finally to examine the mediating role of GOS between GTL and the employee green behaviors studied in the study.

2. Literature Review

2.1. Theoretical Background of the Study

According to studies, it is usually better to gain deep insights through multiple theories to have a more comprehensive understanding of the practice in the social sciences (Deegan et al. 2000). Given that this study strives to build an integrated model for hoteliers in developing countries on how to benefit from the GTL approach to motivate a set of employees' green behaviors while considering the mediating role of GOS, the theoretical framework consists of sixteen hypotheses that require a theoretical foundation based on more than one theory to be solid. For example, according to organizational support theory, employees' perceptions of organizational support (OS) will rise when they feel their leaders are treating them positively (Rhoades and Eisenberger 2002). Thus, GT leaders' practices effectively stimulate employees' perceived GOS since they deliver organizational resources

considered an essential source of perceived OS (Engelbrecht and Samuel 2019). Thus, with each hypothesis, the appropriate theory was used.

2.2. GTL and Green Behaviors

2.2.1. GTL and Green Recycling

The hotel sector is a significant contributor to organic/wet waste in landfills, leading to GHG emissions. Dry waste contains recyclable garbage such as metal, plastic, paper, linen, and other materials. Wet waste is primarily organic waste, such as food waste, garden waste, and cooking oil waste (Singh et al. 2014). Research revealed that hotels that took part in waste management programs benefited financially directly as well as indirectly through improved corporate image and cost savings (Vähätiitto 2010). Recycling materials is crucial to sustainable environmental management (Zhang et al. 2023). Therefore, numerous studies have looked at the elements that influence recycling behavior (Pei 2019; Wan et al. 2021). According to Yuriev et al. (2020), the “Planned Behavior Theory” gained the most interest in concentrating on recycling behavior. It makes the argument that since people are rational beings, their behaviors are the consequence of careful consideration (Liu et al. 2019). On the other hand, for recycling to be effective, everyone will need to be persuaded to be involved in recycling behaviors (Williams and Kelly 2003). Given that GTL is acknowledged as a useful organizational resource with the possibility of affecting workers’ value systems and shared beliefs that are substantial in shaping or boosting eco-behaviors (Azhar and Yang 2022; Graves and Sarkis 2018), GT leaders can motivate employees to participate in hotel recycling activities. The value-based inspirational character of GT leaders makes them appropriate for leading as role models for workers and promotes their involvement in behaviors that support the organization and environment (Robertson and Barling 2013). These considerations allow us to formulate the following hypothesis.

Hypothesis 1 (H1). *GTL has a positive effect on green recycling.*

2.2.2. GTL and Green Work Engagement

Green work engagement (GWE) refers to “the energy an employee puts in their green work-related tasks, the willingness to exert efforts at the green level, and the absorption level in green work” (Aboramadan 2022). Bakker et al. (2008) state that engaged workers often exhibit more energy for their jobs. In this context, higher levels of enthusiasm, trust, cooperation, loyalty, and performance are driven by transformational leadership (Chen and Chang 2013). According to the “Job Demand–Resources” (JD–Rs) Theory, there are two categories of functional circumstances at work: demands and resources. The term “job demand” describes a work function that involves mental and/or physical effort to maintain, typically in relation to a particular physical and emotional requirement (Demerouti et al. 2001), while job resources show what motivates employees to engage in their work (Bakker and Demerouti 2017). Accordingly, GTL may boost job resources, which in turn boosts green engagement (Huang et al. 2021). Similarly, based on the “Ability–Motivation–Opportunity theory” (AMO), green human resources management activities have an effect on employees’ ability to improve organizational efficiency through recruiting, training and employee development, incentives, and financial or non-financial compensation, as well as opportunities for collaboration and empowerment (Gerhart 2005). Meanwhile, GTL makes use of green human resource management to improve the skills and motivations of employees (Jia et al. 2018), as well as green work engagement (Singh et al. 2020). Thus, we can suggest that:

Hypothesis 2 (H2). *GTL has a positive effect on green work engagement.*

2.2.3. GTL and Green Innovation Work Behavior

GTL's duty is to train and encourage its employees to participate in green innovation (Chen and Chang 2013; Zhou et al. 2018). When employees are more intrinsically motivated to develop environmentally friendly and clean products, they may come up with more inventive solutions (Li et al. 2020). Consequently, an organization's preparedness and ability to achieve its environmental goals depends on the relationship between GTL and green innovation (GI) (Singh et al. 2020). According to Reiter-Palmon and Illies (2004), engaging in the creative process and encouraging green thinking among employees are key components of innovative solutions. Consequently, this mitigates ecological problems and supports sustainable development (Elshaer et al. 2024; Mittal and Dhar 2016). As stated by Bani-Melhem et al. (Bani-Melhem et al. 2022), when there is significant leadership support for green innovation, environmental activities improve consumer loyalty through green innovation performance. Employees gain values, beliefs, and capabilities from GTL, and in return, they become more motivated and committed, which boosts green performance and creativity (Chen and Chang 2013; Zhou et al. 2018). It is possible to build the following hypothesis from this debate.

Hypothesis 3 (H3). *GTL has a positive effect on green innovation work behavior.*

2.2.4. GTL and Green Service Recovery Performance (GSRP)

According to Luu (2018) a worker's ability to address environmental problems brought up by customer complaints is measured by their GSRP. This conduct frequently entails identifying problems, apologizing, and offering customers remedies (Prasongsukarn and Patterson 2012). Based on the "social learning theory," people imitate the attitudes and behaviors of others like leaders (Zhou et al. 2018). Consequently, environmentally conscientious leaders exhibit availability, ease, and flexibility when it comes to environmental issues, which shapes their followers' perceptions of themselves (Aboramadan et al. 2022). From this argument, it is possible to build the following hypothesis.

Hypothesis 4 (H4). *GTL has a positive effect on green service recovery performance.*

2.2.5. GTL and Green Knowledge-Sharing Behaviors

According to Rubel et al. (2021), green knowledge-sharing behavior is the practice of employees exchanging experiences and information about green issues with coworkers and peers. The practice of sharing knowledge is essential to the growth of the hospitality industry (Aboramadan et al. 2022) because it enhances product development, efficiency in operations, and service innovation (Chang and Hung 2021; Le and Lei 2018). By modeling behaviors that are considered appropriate and expected for their particular roles, transformational leaders can teach their followers about green organizational principles (Huang et al. 2021). Additionally, they have the ability to influence their followers' personal beliefs to better align with the business's values and give the "green" element more weight (Begum et al. 2022). Subsequently, it is possible to build the following hypothesis from this discussion.

Hypothesis 5 (H5). *GTL has a positive effect on green knowledge-sharing behaviors.*

2.3. GTL and GOS

According to Lamm et al. (2015), GOS refers to the specific attitudes that employees take on the degree to which the company values their efforts toward sustainability. Furthermore, based on "organizational support theory," workers are more likely to engage in green behaviors when they believe they have a trustworthy connection with their employers who value their environmental practices (Kusi et al. 2021). Consequently, rewarding staff members for their environmentally conscious actions would motivate them to help the company meet its environmental goals (Kim et al. 2019). In the hospitality industry, once

employees have proper leadership support, they are more engaged at work and produce acceptable results in their jobs (Çop et al. 2021). On the basis of this previous discussion, the following hypothesis can be created.

Hypothesis 6 (H6). *GTL has a positive effect on green organizational support.*

2.4. GOS and Green Behaviors

2.4.1. GOS and Green Recycling

For recycling to be effective, everyone has to be persuaded to drastically alter their current recycling habits (Williams and Kelly 2003). Moreover, attitudes and societal values significantly impact recycling behavior (Ramayah et al. 2012). Employees are more likely to engage in such actions when they believe their bosses are trustworthy and supportive of their environmental proposals (Kusi et al. 2021). Moreover, hotel staff members are more engaged at work and deliver satisfactory outcomes when they have the right organizational assistance (Çop et al. 2021). Based on these arguments, we can assume the following hypothesis:

Hypothesis 7 (H7). *GOS has a positive effect on Green Recycling.*

2.4.2. GOS and Green Work Engagement (GWE)

According to Kim et al. (2019), paying staff members for their environmentally friendly actions will motivate them to help the company meet its environmental goals. Moreover, GWE is often linked to positive attitudes and a sense of workplace satisfaction (Huang et al. 2021). Employee engagement towards green behaviors might be based on required activities or on voluntary, non-rewarding initiatives (Amrutha and Geetha 2021). GWE is featured by dedication, which includes passion, happiness, motivation, and contribution to green behaviors (Zhang et al. 2024). Based on the preceding discussion, the following hypothesis may be formed.

Hypothesis 8 (H8). *GOS has a positive effect on green work engagement.*

2.4.3. GOS and Green Innovation Work Behavior

Reiter-Palmon and Illies (2004) assert that fostering green thinking in staff members and participating in the creative process are essential elements of innovative solutions. Leaders impart values, beliefs, and skills to their staff, which increases employee motivation and commitment and fosters innovation and green performance (Chen and Chang 2013; Zhou et al. 2018). Additionally, workers may come up with more creative ideas when they are more genuinely driven to create clean, environmentally friendly goods (Li et al. 2020). In addition, leaders have to create a novel objective, fully support it, and explain it to their staff in detail so that they will share their excitement and trust in it (Bhatti et al. 2022). Based on these arguments, the following hypothesis can be formed.

Hypothesis 9 (H9). *GOS has a positive effect on green innovation work behavior.*

2.4.4. GOS and Green Service Recovery Performance

The level of organizational support has a favorable effect on how well employees handle client complaints (Boshoff and Allen 2000). Similarly, workers who feel empowered are more likely to perform well in service recovery (Yavas et al. 2010). Thus, green HR practices support the company's voluntary environmental defense efforts and foster employee perceptions of GOS (Aboramadan and Karatepe 2021). Furthermore, the level of support that employees receive from their businesses will determine their ability to demonstrate green recovery behavior in the context of environmentally friendly service issues (Aboramadan et al. 2022). In light of this argument, the study hypothesizes that:

Hypothesis 10 (H10). *GOS has a positive effect on green service recovery performance (GSRP).*

2.4.5. GOS and Green Knowledge-Sharing Behaviors

Employees who receive assistance from their company in pursuing environmental sustainability are more likely to perform well in terms of the environment (Lamm et al. 2015). Le and Lei (2018) argued that individuals' sharing of knowledge activity may be a result of their sense of support from their managers. Consequently, if employees realize that their organization is supportive, they will be more likely to share their knowledge and skills, setting the basis for establishing corporate knowledge sharing (Chang and Hung 2021). Regarding these arguments, the following hypothesis can be developed.

Hypothesis 11 (H11). *GOS has a positive effect on green knowledge-sharing behaviors.*

According to Mittal and Dhar (2016), green transformational leaders clearly convey the organization's green goal. Accordingly, workers who receive effective leadership direction become more invested in their job and provide results that meet expectations (Çop et al. 2021). Furthermore, hotels cannot accomplish their objectives for environmental sustainability and green practices without having a fair procedure for evaluating green performance and without providing incentives to employees for adopting green behaviors (Aboramadan et al. 2022). Employees are more likely to engage in environmentally beneficial activities when they perceive that their leaders are trustworthy and supportive of their environmental projects (Kusi et al. 2021). Additionally, when given the proper organizational support, hotel employees perform better at work and are more engaged (Çop et al. 2021).

Based on an extensive review of the previous existing literature that examines the inter-connections between GTL, GOS, and EGB, this research examined not only the direct influence of GTL on EGB, but also investigated that indirect influence through GOS as a mediator. Therefore, the following hypothesis can be developed, as illustrated in Figure 1.

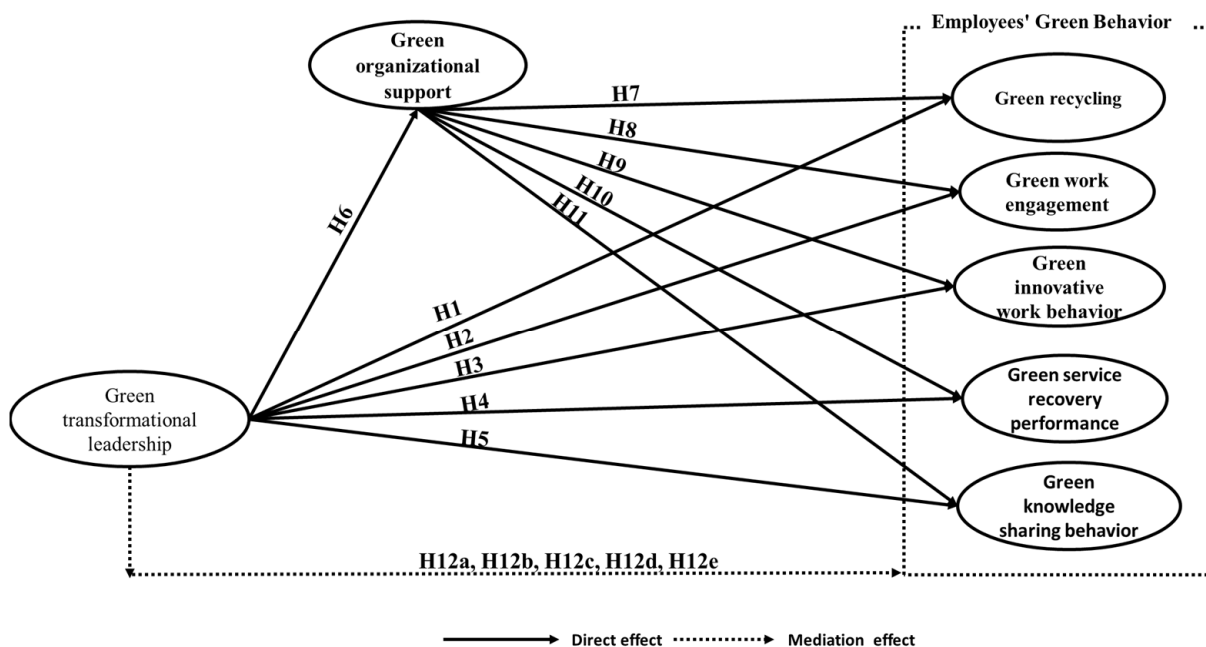


Figure 1. Study hypotheses and conceptual model.

Hypothesis 12 (H12). *Perceived GOS mediates the positive relation between (a) GTL and GR, (b) GTL and GWE, (c) GTL and GIWB, (d) GTL and SRPs, and (e) GTL and KS.*

3. Research Methods

3.1. Sampling and Data Gathering

This study included entry-level employees from five-star hotels located in Cairo, Egypt. Convenience sampling was used to contact employees to investigate the research hypotheses. Although the convenience sampling technique has some restrictions on how far the results may be applied, the researchers were utilizing this approach for various reasons. First, it is an effective and simple method that does not consume time and provided researchers the easiest access to the needed information (Stratton 2021). Second, research on hospitality has frequently utilized this technique (Aboramadan et al. 2022). The researchers followed the criteria made by Stratton (2021) to enhance the sample technique's reliability and reduce any biases associated with it. For example, unclear and complicated research objectives were avoided. Additionally, a verified questionnaire survey and trustworthy research metrics were used. In addition, the researchers made an effort to include as many responses as feasible in the study to adequately reflect the population. Moreover, making the questionnaire simple to understand, concise, and friendly to responders was another measure to reduce non-response bias (Churchill and Iacobucci 2006). Additionally, statistically, the value of Harman's single factor was 42.3%, below 50%, indicating CMB is not a problem (Podsakoff et al. 2003).

The hotel chains' upper management consented before the questionnaire was given out, allowing personnel to participate. After the main survey was originally written in English, it was translated into Arabic in order to collect responses from native Arabic speakers. The same poll was then translated again, this time from Arabic to English, to ensure that no word's meaning was altered. The questionnaires were piloted with 20 participants to see how the questions were phrased and ordered and how long they were. In addition, they were distributed to employees using a paper and pencil approach from June 2022 through May 2023. A total of 400 questionnaires were distributed in 10 hotels inside Cairo (40 questionnaires in each one), and the researcher was able to collect 350 of them. The demographic information of these employees and scales of GTL, perceived GOS, and EGB were all included in the final version of questionnaires distributed. Twenty of these questionnaires were eliminated because of missing data. Hence, the distribution process resulted in 330 questionnaires, with a ratio of 82.5%.

3.2. Measures

This research depends on items from earlier research to guarantee the constructs' content validity. All of our scales were evaluated using a Likert scale with five points, ranging from "1 = strongly disagree" to "5 = strongly agree". According to Zhang et al. (2020), the GTL scale ($\alpha = 0.963$) was measured with an adjusted version of the six items. Prior research in the hotel industry also made use of these six items (see Suliman et al. 2023). The GOS was measured by 7 items ($\alpha = 0.974$) proposed by Aboramadan et al. (2022). The 3-item scale developed by Fielding et al. (2008) and modified by Park and Ha (2014) was used to measure the green recycling scale ($\alpha = 0.955$). GWE with three subdimensions ($\alpha = 0.964$) was adopted from research utilized by Bhutto et al. (2021). The green innovation work behavior construct ($\alpha = 0.909$) was evaluated by a scale developed by Scott and Bruce (1994) and validated by Aboramadan et al. (2022). The GSRP ($\alpha = 0.866$) and green knowledge-sharing behavior ($\alpha = 0.965$) were measured using 5 items adapted from Luu (2018) and 4 items adapted from Lin (2006), respectively, and validated by Aboramadan et al. (2022) (see Appendix A).

3.3. Data Analysis

We have adopted Anderson and Gerbing's (1988) two-step data analytical strategy (first conduct "confirmatory factor analysis (CFA)", then "structural equation model") using version 20 of "the Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structure (AMOS)".

4. Findings

4.1. Measurement Model Assessment

For our seven-factor conjectured model, the researchers used a covariance matrix and the maximum likelihood approach to conduct CFA. We have performed CFA using a covariance matrix and the maximum likelihood approach for our seven-component hypothesized model. As a result of the model's estimation, the measurement model's overall fit indices were calculated, and the model yielded a satisfactory fit: " $\chi^2 = 672.101$ with $df = 485$, $p < 0.0001$; $\chi^2/df = 1.386$ (<3 , Hair et al. (2010)). The CFI = 0.987; IFI = 0.987; TLI = 0.985; RFI = 0.947; NFI = 0.957", indices that are greater than the minimum permitted value of 0.90 to assess the model's fit (Hu and Bentler 1999; Tucker and Lewis 1973). Another noteworthy number is the "root mean square error of approximation" (RMSEA), which is 0.034. This value is accepted because it is less than 0.08 (Arbuckle 2011).

Researchers examined the "standard residual covariance" to determine if it could significantly worsen the model fit. A few items were, therefore, covaried in the latent variables. GTL2 and GTL3; GTL2 and GTL6; GTL3 and GTL4 in the GTL latent variable, GOS1 and GOS4; GOS1 and GOS7; GOS2 and GOS3; GOS5 and GOS6 in the GOS latent variable, GIWB1 and GIWB5; GIWB1 and GIWB6; GIWB2 and GIWB6; GIWB3 and GIWB5 in the GIWB latent variable, GSRP2 and GSRP5 in the GSRP latent variable were covaried.

Moreover, by calculating the "average variance extracted" (AVE), Cronbach's α and construct reliability (CR) values for our constructs, we further verified the convergent validity and reliability of the scales. (Fornell and Larcker 1981) claim that the convergent validity and reliability requirements are confirmed when AVEs are higher than 0.50 and CRs are higher than 0.70. According to the data shown in Table 1, the AVE and CR values were more than 0.50 and 0.70, respectively. These findings provide evidence that the variables in our study have convergent validity and reliability (Hair et al. 2010).

Table 1. Psychometric properties of the measurement model.

Construct	Mean	SD	"Factor Loading"	CR	A	AVE
"Green Transformational Leadership"				0.959	0.963	0.794
GTL1	3.94	1.32	0.939			
GTL2	3.67	1.28	0.891			
GTL3	3.57	1.28	0.875			
GTL4	3.55	1.26	0.882			
GTL5	3.74	1.34	0.898			
GTL6	3.69	1.27	0.861			
Green Organizational Support				0.971	0.974	0.847
GOS1	3.62	1.28	0.940			
GOS2	3.75	1.13	0.934			
GOS3	3.75	1.19	0.947			
GOS4	3.48	1.24	0.914			
GOS5	3.94	1.06	0.873			
GOS6	3.67	1.12	0.911			
GOS7	3.83	1.12	0.854			
Green Recycling				0.956	0.955	0.878
GR1	3.93	1.36	0.958			
GR2	3.94	1.38	0.964			
GR3	3.70	1.32	0.887			
Green Work Engagement				0.966	0.964	0.905
GWE1	4.09	1.42	0.979			
GWE2	4.04	1.35	0.954			
GWE3	3.95	1.40	0.920			

Table 1. Cont.

Construct	Mean	SD	“Factor Loading”	CR	A	AVE
Green Innovation Work Behavior				0.909	0.909	0.629
GIWB1	3.84	0.76	0.768			
GIWB2	3.79	0.96	0.715			
GIWB3	3.82	0.81	0.889			
GIWB4	3.90	0.88	0.628			
GIWB5	3.82	0.76	0.845			
GIWB6	3.82	0.78	0.879			
Green Service Recovery Performance				0.877	0.866	0.593
GSRP1	3.82	0.94	0.552			
GSRP2	3.85	1.01	0.883			
GSRP3	3.81	1.03	0.782			
GSRP4	3.88	0.98	0.746			
GSRP5	4.00	1.04	0.843			
Green Knowledge-Sharing Behaviors				0.967	0.965	0.879
GKSB1	3.85	1.39	0.967			
GKSB2	3.86	1.29	0.959			
GKSB3	3.83	1.30	0.944			
GKSB4	3.75	1.32	0.878			

SD = standard deviation; CR = composite reliability; α = alpha reliability; AVE = average variance extracted.

Fornell and Larcker’s (1981) criterion, which contrasts the square root of the AVE with intercorrelations between the variables, was also used to verify discriminant validity. This criterion states that when the square root of the AVE is greater than the intercorrelations between the study variables, the discriminant validity condition is confirmed. The square root of the AVE was greater than the stated correlations between the research variables, according to the findings shown in Table 2. To sum up, the methods that have been previously presented provide evidence in favor of the discriminant validity of our research variables.

Table 2. Discriminant validity results.

Variables	GIL	GOS	GR	GWE	GIWB	GSRP	GKSB
“Green Transformational Leadership” (GTL)	0.794						
“Green Organizational Support” (GOS)	0.086	0.847					
Green Recycling (GR)	0.681	0.194	0.878				
Green Work Engagement (GWE)	0.779	0.137	0.733	0.905			
Green Innovation Work Behavior (GIWB)	0.003	0.006	0.001	0.001	0.629		
Green Service Recovery Performance (GSRP)	0.300	0.016	0.214	0.315	0.006	0.593	
Green Knowledge-Sharing Behaviors (GKSB)	0.717	0.149	0.802	0.774	0.001	0.321	0.879

4.2. Hypothesis Testing

In light of the foregoing, standardized path coefficients (β) were used to test the relationships that had been hypothesized, using the structural equation model (see Table 3 and Figure 2). The majority of these estimates have an absolute t-value > 3.29 , $p < 0.001$; therefore, they can be characterized as affirmatively strong estimates. According to the results (see Table 3), GTL was shown to have a positive impact on GR ($\beta = 0.796$, $p < 0.01$), GWE ($\beta = 0.910$, $p < 0.01$), GSRP ($\beta = 0.840$, $p < 0.01$), GKSB ($\beta = 0.823$, $p < 0.01$), and GOS ($\beta = 0.243$, $p < 0.01$). These results supported our prediction of theoretical hypotheses for H1, H2, H4, H5 and H6. It is also important to highlight that GOS has a positive impact on GR ($\beta = 0.267$, $p < 0.01$), GWE ($\beta = 0.175$, $p < 0.01$), GSRP ($\beta = 0.108$, $p < 0.01$), GKSB ($\beta = 0.181$, $p < 0.01$), supporting H7, H8, H10, and H11, respectively. Meanwhile, the results showed that there is no relation between GTL with GIWB ($\beta = 0.020$, $p > 0.05$) and GOS with GIWB ($\beta = 0.050$, $p > 0.05$), rejecting H3 and H9.

Table 3. Hypothesis testing results (direct paths).

H	Path	Beta Coefficients (β)	t-Values	Results
H1	GTL → GR	0.796	21.554 ***	Supported
H2	GTL → GWE	0.910	26.835 ***	Supported
H3	GTL → GIWB	0.020	0.618	Rejected
H4	GTL → GSRP	0.840	24.994 ***	Supported
H5	GTL → GKSB	0.823	24.160 ***	Supported
H6	GTL → GOS	0.243	5.013 ***	Supported
H7	GOS → GR	0.267	6.586 ***	Supported
H8	GOS → GWE	0.175	4.702 ***	Supported
H9	GOS → GIWB	0.050	1.384	Rejected
H10	GOS → GSRP	0.108	2.924 *	Supported
H11	GOS → GKSB	0.181	4.852 ***	Supported

Notes: N = 330; “GTL = green transformational leadership, GR = green recycling; GWE = green work engagement; GIWB = green innovative work behavior, GSRP = green service recovery performance; GKSB = green knowledge-sharing behavior; GOS = green organizational support”. “* absolute t-value > 1.96, $p < 0.05$; *** absolute t-value > 3.29, $p < 0.001$ ”. → = Affect.

With regard to the mediating effect of GOS on the relations of GTL and EGB, we considered the lower level of confidence interval (LLCI) and upper level of confidence interval (ULCI) (see Table 4 and Figure 2). Five-hundred bootstrap samples were used with a 90% confidence interval. The SEM mediation output indicates that four indirect effects are statistically significant. More specifically, the following relationships were mediated by GOS: GTL → GR ($\beta = 0.065$, LLCI = 0.030, ULCI = 0.108, $p < 0.01$), GTL → GWE ($\beta = 0.042$, LLCI = 0.016, ULCI = 0.075, $p < 0.01$), GTL → GSRP ($\beta = 0.026$, LLCI = 0.005, ULCI = 0.055, $p < 0.05$), and GTL → GKSB ($\beta = 0.044$, LLCI = 0.018, ULCI = 0.079, $p < 0.01$). These results provide evidence for H12a, H12b, H12d, and H12e. Meanwhile, the result indicates that GTL has not had an effect on GIWB through GOS ($\beta = 0.012$, LLCI = -0.007 , ULCI = 0.032, $p > 0.05$) (Reject of H12c).

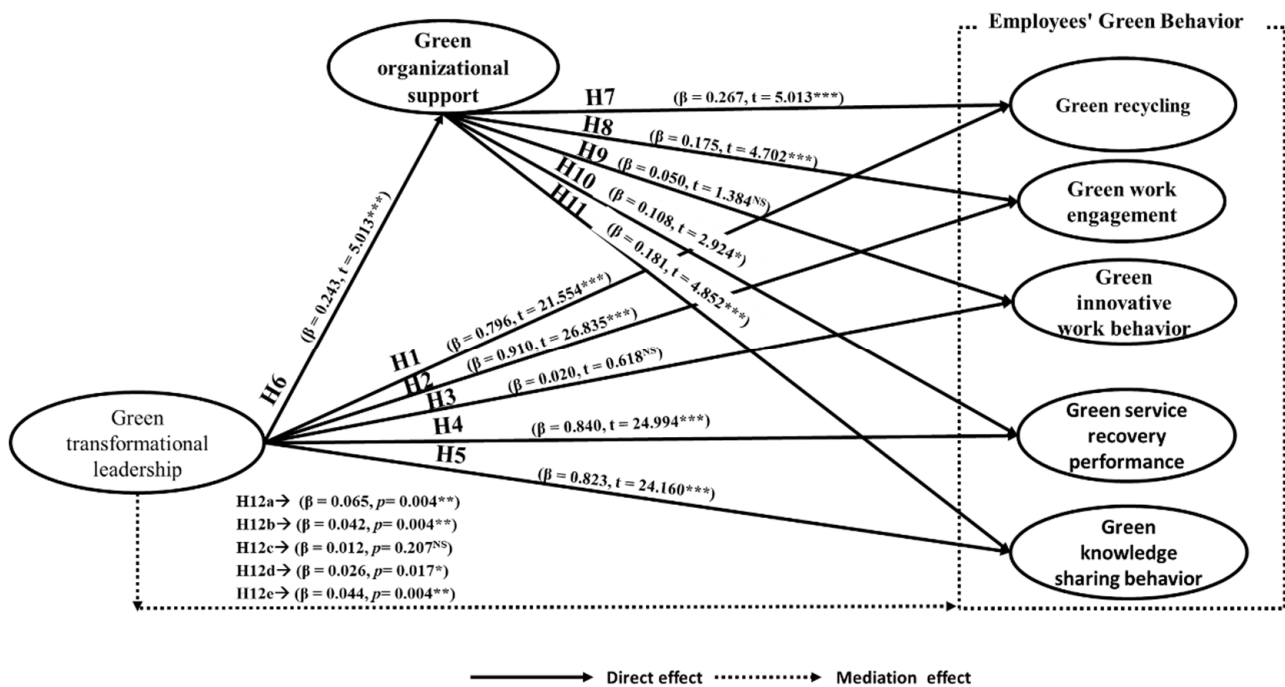


Figure 2. Estimation of structure model. * absolute t-value > 1.96, $p < 0.05$; ** absolute t-value > 2.58, $p < 0.01$; *** absolute t-value > 3.29, $p < 0.001$; and NS → Not Significant.

Table 4. Hypothesis testing results (indirect relationships).

H	Path (Indirect Effects)		Indirect	Lower Boundary	Upper Boundary	Sig	
H12a	GTL	→	GOS → GR	0.065	0.030	0.108	0.004 **
H12b	GTL	→	GOS → GWE	0.042	0.016	0.075	0.004 **
H12c	GTL	→	GOS → GIWB	0.012	−0.007	0.032	0.207
H12d	GTL	→	GOS → GSRP	0.026	0.005	0.055	0.017 *
H12e	GTL	→	GOS → GKSB	0.044	0.018	0.079	0.004 **

Notes: N = 330; * $p \leq 0.05$, ** $p \leq 0.01$, → = Affect.

4.3. Discussion

This research, which focuses on the hotel business in a sample of five-star hotels in Egypt, expands our understanding of the positive elements of transformational leadership by illustrating how green transformational leadership influences employees' green behavior by using a new research model. Based on a set of theories, i.e., Planned Behavior Theory, engagement theory, Job Demand–Resources (JD–Rs) Theory, Ability–Motivation–Opportunity Theory, Social Learning Theory, and Organizational Support Theory, this kind of leadership has a major influence on the conduct and output of environmentally conscious employees and is favorably connected with the suitability of their cognitive values. Hence, the authors examined the effects of GTL on GR, GWE, GIWB, GSRP, and GKSB separately. Moreover, the mediating effect of perceived GOS was measured to investigate the indirect effect on this relationship. In light of the findings of the hypotheses this study explored, the following important findings can be drawn.

First, the findings proved that there is a positive path between GTL and GR. As mentioned above, green recycling is known as sustainable recycling or environmentally friendly recycling, and it is a set of practices that is not just environmentally acquired behavior, which requires training and learning on how to deal with such practices (Popescu et al. 2019). This suggests that when transformational leaders are transparent about environmental issues and practices, it is likely to significantly impact how environmentally conscious employees under their leadership are toward a variety of green practices, the most crucial of which is green recycling. This is accomplished by having leaders continuously monitor employees to ensure they follow the procedures and carry them out as needed. This aligns with the principles derived from Planned Behavior Theory. These findings corroborate earlier empirical findings in the hotel industry, which suggested that pro-environmental leadership behaviors influence EGB (Wan et al. 2021; Zhang et al. 2023).

Second, our findings revealed a favorable correlation between GTL and its engagement in green work. As anticipated, we discovered that GTL has an impact on hotel employees' dedication to enforcing environmental regulations and completing all of their assigned tasks while addressing environmental issues. This can be explained through Engagement Theory and Job Demand Resources Theory. According to these theories, transformational leaders might encourage their employees to actively participate in carrying out the environmental responsibilities that have been delegated to them by enhancing their psychological and physical resources (i.e., self-assurance, zeal, and cooperation) in carrying out green engagement. The results show that employees perform better when they believe their leaders are approachable when it comes to environmental issues. Moreover, they are more likely to care about the environment and take part in workplace green activities if they are intellectually inspired and motivated by environmentally conscious transformational leaders. The findings are consistent with earlier research, including (Çop et al. 2021; Huang et al. 2021) studies, which discovered that GTL may increase job resources, which in turn increases green engagement. They provided evidence for their claims by citing the example of green transformative leaders who foster an atmosphere where employees may develop and learn while feeling invested in the company and the environment.

Third, the study tested the connection between GIWB and GTL. The results showed that GTL does not significantly affect employees' green innovation work behavior. These findings are wholly dissimilar from those that showed a direct relationship between green leadership and employees' innovative and creative work behaviors in the hotel sector (e.g., [Aboramadan and Karatepe 2021](#); [Bhutto et al. 2021](#)). Researchers provide multiple explanations for this. First and foremost, in developing countries, hotel employees have a duty to carry out routine responsibilities as they are assigned and engage in innovation and development that necessitates the revision of the long-term strategic plan—a highly complicated issue inside hotel organizations. Furthermore, it is costly to experiment with and apply new environmental ways, which makes it challenging for the employee to do so. Lastly, issues with the creation of novel environmental systems necessitate a particular kind of research that is quite different from the work that hotels do. Examples of these issues include the pursuit of developing systems that can generate electricity or break down wastewater inside floating hotels. All of these matters can negatively affect employee innovation behavior in areas related to environmental practices within the hotel industry.

Fourth, our findings demonstrated a positive correlation between GTL and employees' green recovery performance. In line with Social Learning Theory, which asserts that people copy the actions of others, particularly those of the leaders in their workplace ([Zhou et al. 2018](#)), employees in the service sector always obtain their experiences from the way their leaders and managers behave. They impart to them the fundamentals of interacting with others in the workplace, particularly regarding customer issues ([Luu 2018](#)). Consequently, the behavior of his crew members will be positively impacted if the leader possesses the necessary experience to handle such situations ([Chen et al. 2015](#)). Therefore, staff members can pick up behavior-related tips on green service recovery performance from their leaders ([Aboramadan et al. 2022](#)).

Fifth, we investigated the linkage between GTL and GKSB. The findings demonstrated that GTL significantly affects GKSB. Though the study's findings demonstrated that there is no relation between leaders' behavior and employees' creativity and green innovation within hotel institutions, the findings of this hypothesis, however, also highlight another idea: despite the challenges associated with inventive activity on the part of employees, it's feasible that they have a wealth of environmentally friendly ideas that they may share with their superiors ([Singh et al. 2020](#)). Moreover, they might share their prior green experiences with coworkers who are on the same level ([Begum et al. 2022](#)).

Sixth, our findings showed a favorable correlation between perceived GOS and GTL. Using Organizational Support Theory as a theoretical framework, rewarding employees for their environmentally conscious actions would motivate them to help the company meet its environmental objectives. This research suggests that GTL practices foster an environmentally friendly workplace where staff members feel that their leaders are concerned about green management matters. Therefore, one may argue that the existence of GTL behaviors boosts workers' trust that their employer supports and recognizes their environmental endeavors ([Mittal and Dhar 2016](#)).

Additionally, we investigated the relationship between perceived GOS and EGB, such as green recycling (GR), green work engagement (GWE), GIWB, GSRP, and GKSB. The results showed a positive correlation between GOS and four green behaviors (GR, GWE, GSRP, and GKSB) out of the proposed five behaviors. These findings align with social exchange theory ([Bandura and Walters 1977](#)) and imply that employees are more likely to participate in green behaviors when they perceive that their organizations are supporting their efforts to be environmentally friendly. These findings were consistent with earlier research ([Aboramadan et al. 2022](#); [Karatepe et al. 2022](#)). Furthermore, [Corrales-Estrada et al. \(2021\)](#) stated that the provision of financial or social assistance to employees by the business facilitates the integration of green performance across all organizational divisions and enhances the environmental, social, and financial outcomes of the companies. The results of this study demonstrated the significant role that perceived GOS plays in fostering EGB. It also showed that hotel establishments that improve environmental performance

and participate in environmental projects help create a work environment where employees are fully committed to their jobs, capable of achieving difficult goals, deeply engaged in environmental work, and more excited and energized when working on environmental tasks. On the other hand, it was found that perceived GOS had no effect on green innovation work behavior (GIWB) (Rejecting H9); this goes against what researchers have logically predicted and suggested. In addition to providing evidence for the rejection of hypothesis (3) regarding the relationship between GTL and GIWB, institutions in developing countries, particularly in light of the economic downturn these countries—led by Egypt—are experiencing, find it very challenging to provide financial support for ambitious and expensive ideas and projects (Ikram 2007; Naudé 2010; Zemtsov 2020).

Lastly, the findings demonstrated that GOS mediated the link between (a) GTL and GR, (b) GTL and GWE, (d) GTL and GSRP, and (e) GTL and GKSB. This suggests that when GTL behaviors are demonstrated with regard to environmental issues, employees believe that their hotels strongly support their green values. This, in turn, will raise employees' perceptions of OS and eventually encourage them to engage in positive eco-friendly behaviors. These findings were consistent with Sroufe's (Sroufe 2017) assertion that organizational support for employees—both leaders and followers—makes GTL more efficient and aids in the achievement of long-term objectives for business development. In order to develop sustainability in business performance, the green transformational leader can therefore more effectively guide, inspire, and motivate their followers to work to the best of their abilities to remove environmental impacts of business activities when organizational support is available. According to Suifan et al. (2018), the performance of green transformational leaders and the development and production of sustainability in company performance are enhanced by organizational support. Thus, organizational support enhances transformational leadership's contribution to long-term corporate growth. In addition, these findings were consistent with earlier research on the relationship between green inclusive leadership and hotel employees' green performance (Aboramadan et al. 2022) as well as the relationship between green management practices and hotel employees' green performance (Aboramadan and Karatepe 2021; Karatepe et al. 2022). The aforementioned discovery highlights the noteworthy function of perceived GOS as a crucial predictor of employees' green behavior, in addition to acting as a large mediating factor in the relationship between green transformational leadership and employees' green behavior.

4.4. Theoretical Implications

Our research has multiple theoretical contributions. First, this study, through the proposed model that tests the relationship between GTL and a group of employees' green behaviors, i.e., green recycling, green work engagement, green innovation behavior, green service recovery performance, and green knowledge-sharing behavior, taking into account the mediating role of GOS, helped fill the gap in the lack of research that addressed these research points, especially in developing countries (Darvishmotevali and Altinay 2022). As far as the authors are aware, in the literature on hospitality, just one study (Suliman et al. 2023) has looked at how GTL improves environmental performance among Egyptian hotel staff when implemented in three- and four-star hotels.

Secondly, the study responded to the recommendations of previous studies on the need to shift the focus from looking at the antecedents of eco-friendly organizational results to looking at the antecedents of workers' green behaviors (Luu 2017). This research paper demonstrated how important GTL is in encouraging green behavior among hotel employees. According to this study, followers of transformational leaders who are very conscious of environmental practices are greatly influenced by their actions. This is probably because employees who work for transformational leaders are more likely to be aware of sustainable development and environmental practices. This raises employees' awareness of environmental issues and helps them build more effective green behaviors such as green recycling, knowledge sharing, and service recovery.

Third, the study's results demonstrated that perceived GOS substantially mediated the relationship between GTL and employees' green behavior. Thus, the study contributes to and expands the green hospitality management literature through this contribution, which many studies have overlooked.

Fourth, authors address academic requests to broaden the scope of green leadership studies by investigating GTL, as opposed to only green inclusive leadership (Aboramadan et al. 2022). Additionally, their model would be expanded by looking at how green leadership affects more ecologically friendly green behaviors, which are stronger indicators of green behavioral outcomes and would enhance the literature on green leadership styles in the hospitality industry.

Finally, these results may provide a useful foundation for scholars studying hospitality to better comprehend the factors influencing employees' green behavior in the hotel industry context.

4.5. Managerial Implications

The results of our study have significant practical ramifications that might offer guidance to hospitality establishments. First, since this leadership style helps to encourage positive green behavioral outcomes in the workplace, such as addressing customers' environmental complaints, implementing green recycling, and sharing green-related knowledge and information, management in the hospitality industry ought to integrate the GTL concept into their strategy. There is almost agreement in hospitality studies that most of the green behaviors of hotel workers are voluntary, not stipulated in official frameworks, and stem from environmental organizational citizenship behaviors, so GTL practices are more appropriate to encourage employees to apply and practice these behaviors within the work environment (Elshaer et al. 2022).

Second, hiring managers should take into account selecting leaders whose actions are predicated on being transparent and readily available to talk about and resolve environmental issues in the hospitality industry staffing regulations. Furthermore, to cope with environmental efforts, hospitality firms should provide their executives with training and coaching on how to foster a transformative climate by being more approachable, transparent, and available. In particular, HR departments must collaborate closely with leaders to elucidate the significance of green practices and the ways in which leaders may facilitate the implementation of those practices. Additionally, to ensure that the desired behaviors are promoted, we advise hotels to improve their performance evaluation systems so that leaders can be evaluated based on their GTL behaviors.

Third, according to the results of the study, GOS succeeded in playing the role of mediator between GTL and green employee behaviors, and this indicates that GTL needs managerial support to complete its role in improving green employee behaviors in hotels. Thus, this study emphasizes the significance of perceived GOS among hotel employees, because it encourages their green behavioral performance. We emphasize that when a business recognizes its employees' contributions to the environment, this will create an environment that is conducive to encouraging positive environmental performance. Additionally, hotel managers ought to honor and commend employees who demonstrate excellence in environmental practices. Moreover, to ensure that employees feel their efforts are making a difference, managers should foster an exciting and encouraging green work in addition to offering rewards and support. Furthermore, managers could also involve their employees in green planning projects to promote ownership and involvement. Offering training and educational opportunities can also help employees become more aware of the contributions they can make to a greener workplace. Consequently, we urge hospitality establishments to be receptive to their staff's green input and efforts and to express our gratitude for them.

Fourth, establishments in the hospitality industry ought to make concerted efforts to improve GIWB. This can be achieved by designating a specific percentage of the annual budget to fund eco-friendly initiatives and projects and providing significant financial

incentives and pay to individuals who have creative eco-friendly ideas that hotels can use to enhance other operations.

4.6. Limitations and Further Research

The study focused specifically on the hotel industry, which may limit the generalizability of the study results to other sectors. Future research could explore the applicability of the proposed model in different industries to enhance the generalizability of the results. Moreover, the research utilized a cross-sectional design, which captures a snapshot of data at a single point in time. Longitudinal studies could provide insights into GTL, EGB, and GOS dynamics over time. Additionally, the data were collected through self-reported surveys, which may introduce common method bias and inflate the relationships among variables. Future research could employ multi-source data collection methods or experimental designs to mitigate this bias. Future research could compare the effectiveness of GTL and GOS across different industries to identify sector-specific differences and best practices. Exploring potential moderators (such as organizational culture, industry regulations, and geographical location) and mediating factors (such as environmental attitudes, organizational commitment, and job satisfaction) could provide insights into the boundary conditions of the relationship between green leadership, green organizational support, and EGB. Finally, longitudinal studies could examine the long-term effects of GTL and GOS on employees' green behavior, allowing for the exploration of causal relationships and temporal dynamics.

5. Conclusions

This paper investigated the nexus between GTL, EGB, with GOS as mediator in the hospitality industry. The results indicated a positive significant relationship between GTL and EGB, suggesting that managers who establish environmentally conscious behaviors and foster their subordinates to adopt sustainability practices are more likely to support green policies among subordinates. Furthermore, the study indicated that GOS mediates the path from GTL to EGB, emphasizing the significance of organizational resources, policies, and initiatives in accelerating environmentally responsible practices. These results have some contribution to the current literature by highlighting the processes through which organizational leadership and support can foster sustainability policies in the hotel business. Leaders who demonstrate green transformational behaviors—such as a transparent sustainability vision, insight, and an obligation to eco-friendly initiatives—successfully motivate and lead their subordinates toward environmentally responsible practices. The synergy between GTL and GOS generates a working environment where sustainable initiatives are not just fortified but embedded in the deep organizational culture. This combination results in abundant of advantages, including improved overall organizational reputation, cost control through efficient resource usage, and enhanced employee ethics and retention due to the alignment of business values with individual morals. Furthermore, according to the results of the study, GOS succeeded in playing a significant role in mediating the path from GTL to GEB, and this signifies that GTL requires managerial support to successfully achieve its role in progressing GEB in hotels businesses.

Author Contributions: Conceptualization, I.A.E. and S.F.; methodology, I.A.E., S.F., Y.S., M.N.E. and A.M.S.A.; software, I.A.E. and S.F.; validation, I.A.E., A.M.S.A., M.A.M., M.N.E. and S.F.; formal analysis, I.A.E. and A.M.S.A.; investigation, I.A.E., S.F., M.N.E. and A.M.S.A.; resources, I.A.E.; data curation, I.A.E.; writing—original draft preparation, S.F., I.A.E., Y.S. and A.M.S.A.; writing—review and editing, I.A.E., S.F., M.N.E. and A.M.S.A.; visualization, I.A.E.; supervision, I.A.E.; project administration, I.A.E., S.F. and A.M.S.A.; funding acquisition, I.A.E. and A.M.S.A. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant No. A022].

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Deanship of the Scientific Research Ethical Committee, King Faisal University (project number: A022, date of approval: 26 September 2023).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are available upon request from researchers who meet the eligibility criteria. Kindly contact the first author privately through e-mail.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Green Transformational Leadership

GTL1: "The leader of the green innovation project inspires the project members with environmental plans".

GTL2: "The leader of the green innovation project provides a clear environmental vision for the project members to follow".

GTL3: "The leader of the green innovation project gets the project members to work together for the same environmental goals".

GTL4: "The leader of the green innovation project encourages the project members to achieve environmental goals".

GTL5: "The leader of the green innovation project acts by considering the environmental beliefs of project members".

GTL6: "The leader of the green innovation project stimulates the project members to think about green ideas".

Green Organizational Support

GOS1: "Our hotel values my contribution to green management issues".

GOS2: "Our hotel really considers my environmental values and goals".

GOS3: "Our hotel cares about my opinions on green management issues".

GOS4: "Our hotel takes pride in my accomplishments on green management issues".

GOS5: "Our hotel would ignore any complaint from me on green management issues".

GOS6: "Our hotel values extra effort from me on green management issues".

GOS7: "Our hotel cares about my satisfaction with green management issues".

Green Recycling

GR1: "I feel a strong personal obligation for recycling".

GR2: "I am willing to put extra effort into recycling on a regular basis".

GR3: "I would feel guilty if I didn't perform recycling".

Green Work Engagement

GWE1: "When I get up in the morning, I look forward to performing environment-related tasks at work".

GWE2: "I am enthusiastic about my green job, i.e., part of my work that requires performing in an environmentally responsible way".

GWE3: "I get really immersed in environment-related tasks at work".

Green Innovation Work Behavior

GIWB1: "I search out new environmentally related technologies, processes, techniques and/or product ideas".

GIWB2: "I generate green creative ideas".

GIWB3: "I promote and champion green ideas with others".

GIWB4: "I investigate and secure the funds needed to implement new green ideas".

GIWB5: "I develop adequate plans and schedules for the implementation of new green ideas".

GIWB6: "I am environmentally innovative".

Green Service Recovery Performance

- GSRP1: “I don’t mind dealing with customers who complain about the organization’s environmentally unfriendly activities”.
- GSRP2: “Considering all the things I do; I handle environmentally dissatisfied customers quite well”.
- GSRP3: “No customer I deal with leaves environmental complaints unresolved”.
- GSRP4: “Satisfying environmentally complaining customers is a great thrill to me”.
- GSRP5: “Customers with environmental complaints that I have dealt with in the past are among today’s most loyal customers”.

Green Knowledge-Sharing Behaviors

- GKSB1: “I share my environmental job experience with my co-workers”.
- GKSB2: “I share my environmental expertise at the request of my co-workers”.
- GKSB3: “I share my environmental ideas about jobs with my co-workers”.
- GKSB4: “I talk about my environmental tips on jobs with my co-workers”.

References

- Aboramadan, Mohammed. 2022. The Effect of Green HRM on Employee Green Behaviors in Higher Education: The Mediating Mechanism of Green Work Engagement. *International Journal of Organizational Analysis* 30: 7–23. [\[CrossRef\]](#)
- Aboramadan, Mohammed, and Osman M. Karatepe. 2021. Green Human Resource Management, Perceived Green Organizational Support and Their Effects on Hotel Employees’ Behavioral Outcomes. *International Journal of Contemporary Hospitality Management* 33: 3199–3222. [\[CrossRef\]](#)
- Aboramadan, Mohammed, Joseph Crawford, Mehmet Ali Turkmenoglu, and Caterina Farao. 2022. Green Inclusive Leadership and Employee Green Behaviors in the Hotel Industry: Does Perceived Green Organizational Support Matter? *International Journal of Hospitality Management* 107: 103330. [\[CrossRef\]](#)
- Amit, Raphael, and Paul J. H. Schoemaker. 1993. Strategic Assets and Organizational Rent. *Strategic Management Journal* 14: 33–46. [\[CrossRef\]](#)
- Amrutha, V. N., and S. N. Geetha. 2021. Linking Organizational Green Training and Voluntary Workplace Green Behavior: Mediating Role of Green Supporting Climate and Employees’ Green Satisfaction. *Journal of Cleaner Production* 290: 125876. [\[CrossRef\]](#)
- Anderson, James C., and David W. Gerbing. 1988. Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin* 103: 411–23. [\[CrossRef\]](#)
- Arbuckle, James L. 2011. *IBM SPSS Amos 20 User’s Guide*. Chicago: Amos Development Corporation, Chicago: SPSS Inc., pp. 226–29.
- Avolio, Bruce J., Bernard M. Bass, and Dong I. Jung. 1999. Re-examining the Components of Transformational and Transactional Leadership Using the Multifactor Leadership. *Journal of Occupational and Organizational Psychology* 72: 441–62. [\[CrossRef\]](#)
- Azhar, Aisha, and Kaifeng Yang. 2022. Examining the Influence of Transformational Leadership and Green Culture on Pro-Environmental Behaviors: Empirical Evidence From Florida City Governments. *Review of Public Personnel Administration* 42: 738–59. [\[CrossRef\]](#)
- Bakker, Arnold B., and Evangelia Demerouti. 2017. Job Demands–Resources Theory: Taking Stock and Looking Forward. *Journal of Occupational Health Psychology* 22: 273–85. [\[CrossRef\]](#)
- Bakker, Arnold B., Wilmar B. Schaufeli, Michael P. Leiter, and Toon W. Taris. 2008. Work Engagement: An Emerging Concept in Occupational Health Psychology. *Work & Stress* 22: 187–200. [\[CrossRef\]](#)
- Bandura, Albert, and Richard H Walters. 1977. *Social Learning Theory*. Englewood Cliffs: Prentice Hall, vol. 1.
- Bani-Melhem, Shaker, Mohd Ahmad Al-Hawari, and Faridahwati Mohd Shamsudin. 2022. Green Innovation Performance: A Multi-Level Analysis in the Hotel Sector. *Journal of Sustainable Tourism* 30: 1878–96. [\[CrossRef\]](#)
- Barney, Jay. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management* 17: 99–120. [\[CrossRef\]](#)
- Begum, Saira, Muhammad Ashfaq, Enjun Xia, and Usama Awan. 2022. Does Green Transformational Leadership Lead to Green Innovation? The Role of Green Thinking and Creative Process Engagement. *Business Strategy and the Environment* 31: 580–97. [\[CrossRef\]](#)
- Bhatti, Sabeen Hussain, Farida Saleem, Ghulam Murtaza, and Tazeem Ul Haq. 2022. Exploring the Impact of Green Human Resource Management on Environmental Performance: The Roles of Perceived Organizational Support and Innovative Environmental Behavior. *International Journal of Manpower* 43: 742–62. [\[CrossRef\]](#)
- Bhutto, Tahseen Ahmed, Ramsha Farooq, Shalini Talwar, Usama Awan, and Amandeep Dhir. 2021. Green Inclusive Leadership and Green Creativity in the Tourism and Hospitality Sector: Serial Mediation of Green Psychological Climate and Work Engagement. *Journal of Sustainable Tourism* 29: 1716–37. [\[CrossRef\]](#)
- Bissing-Olson, Megan J., Aarti Iyer, Kelly S. Fielding, and Hannes Zacher. 2013. Relationships between Daily Affect and Pro-environmental Behavior at Work: The Moderating Role of Pro-environmental Attitude. *Journal of Organizational Behavior* 34: 156–75. [\[CrossRef\]](#)
- Boshoff, Christo, and Janine Allen. 2000. The Influence of Selected Antecedents on Frontline Staff’s Perceptions of Service Recovery Performance. *International Journal of Service Industry Management* 11: 63–90. [\[CrossRef\]](#)

- Brammer, Stephen, Stefan Hoejmose, and Kerry Marchant. 2012. Environmental Management in SMEs in the UK: Practices, Pressures and Perceived Benefits. *Business Strategy and the Environment* 21: 423–34. [\[CrossRef\]](#)
- Cahyadi, Afriyadi, Diah Natalisa, József Poór, Badia Perizade, and Katalin Szabó. 2022. Predicting the Relationship between Green Transformational Leadership, Green Human Resource Management Practices, and Employees' Green Behavior. *Administrative Sciences* 13: 5. [\[CrossRef\]](#)
- Chang, Tai-Wei, and Cheng-Ze Hung. 2021. How to Shape the Employees' Organization Sustainable Green Knowledge Sharing: Cross-Level Effect of Green Organizational Identity Effect on Green Management Behavior and Performance of Members. *Sustainability* 13: 626. [\[CrossRef\]](#)
- Chen, Yu-Shan, and Ching-Hsun Chang. 2013. The Determinants of Green Product Development Performance: Green Dynamic Capabilities, Green Transformational Leadership, and Green Creativity. *Journal of Business Ethics* 116: 107–19. [\[CrossRef\]](#)
- Chen, Zhijun, Jing Zhu, and Mingjian Zhou. 2015. How Does a Servant Leader Fuel the Service Fire? A Multilevel Model of Servant Leadership, Individual Self Identity, Group Competition Climate, and Customer Service Performance. *Journal of Applied Psychology* 100: 511–21. [\[CrossRef\]](#)
- Churchill, Gilbert A., and Dawn Iacobucci. 2006. *Marketing Research: Methodological Foundations*. New York: Dryden Press, vol. 199.
- Corrales-Estrada, Ana Maria, Loyda Lily Gómez-Santos, Cesar Augusto Bernal-Torres, and Jaime Eric Rodriguez-López. 2021. Sustainability and Resilience Organizational Capabilities to Enhance Business Continuity Management: A Literature Review. *Sustainability* 13: 8196. [\[CrossRef\]](#)
- Çop, Serdar, Victor Oluwafemi Olorunsola, and Uju Violet Alola. 2021. Achieving environmental sustainability through green transformational leadership policy: Can green team resilience help? *Business Strategy and the Environment* 30: 671–82. [\[CrossRef\]](#)
- Darvishmotevali, Mahlagha, and Levent Altinay. 2022. Green HRM, environmental awareness and green behaviors: The moderating role of servant leadership. *Tourism Management* 88: 104401. [\[CrossRef\]](#)
- Deegan, Craig, Michaela Rankin, and Peter Voght. 2000. Firms' Disclosure Reactions to Major Social Incidents: Australian Evidence. *Accounting Forum* 24: 101–30. [\[CrossRef\]](#)
- Della Peruta, Maria Rosaria, Manlio Del Giudice, Rosa Lombardi, and Pedro Soto-Acosta. 2018. Open Innovation, Product Development, and Inter-Company Relationships within Regional Knowledge Clusters. *Journal of the Knowledge Economy* 9: 680–93. [\[CrossRef\]](#)
- Demerouti, Evangelia, Arnold B. Bakker, Friedhelm Nachreiner, and Wilmar B. Schaufeli. 2001. The job demands-resources model of burnout. *Journal of Applied Psychology* 86: 499–512. [\[CrossRef\]](#) [\[PubMed\]](#)
- Donate, Mario J., and Jesús D. Sánchez de Pablo. 2015. The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research* 68: 360–70. [\[CrossRef\]](#)
- Elshaer, Ibrahim A., Manal A. Abdelrahman, Alaa M. S. Azazz, Mahmaod Alrawad, and Sameh Fayyad. 2022. Environmental Transformational Leadership and Green Innovation in the Hotel Industry: Two Moderated Mediation Analyses. *International Journal of Environmental Research and Public Health* 19: 16800. [\[CrossRef\]](#)
- Elshaer, Ibrahim A., Mansour Alyahya, Alaa M. S. Azazz, Mahmoud A. Mansour, Abuelkassem A. A. Mohammad, and Sameh Fayyad. 2024. Understanding the Nexus between Social Commerce, Green Customer Citizenship, Eco-Friendly Behavior and Staying in Green Hotels. *Sustainability* 16: 1409. [\[CrossRef\]](#)
- Engelbrecht, Amos, and Olorunjuwon M. Samuel. 2019. The effect of transformational leadership on intention to quit through perceived organisational support, organisational justice and trust. *South African Journal of Economic and Management Sciences* 22: a2338. [\[CrossRef\]](#)
- Fielding, Kelly S., Rachel McDonald, and Winnifred R. Louis. 2008. Theory of planned behaviour, identity and intentions to engage in environmental activism. *Journal of Environmental Psychology* 28: 318–26. [\[CrossRef\]](#)
- Fornell, Claes, and David F. Larcker. 1981. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research* 18: 39–50. [\[CrossRef\]](#)
- Gerhart, Barry. 2005. Human Resources and Business Performance: Findings, Unanswered Questions, and an Alternative Approach. *Management Revue* 16: 174–85. [\[CrossRef\]](#)
- Graves, Laura M., and Joseph Sarkis. 2018. The role of employees' leadership perceptions, values, and motivation in employees' proenvironmental behaviors. *Journal of Cleaner Production* 196: 576–87. [\[CrossRef\]](#)
- Hair, J F, Jr., William C Black, Barry J Babin, and Rolph E Anderson. 2010. *Multivariate Data Analysis*. New York: Pearson, Maxwell Macmillan International Editions.
- Hossin, Md Altab, Md Sajjad Hosain, Michelle Frempong, Stephen Sarfo Adu-Yeboah, and Mohitul Ameen Ahmed Mustafi. 2021. What Drives Sustainable Organizational Performance? The Roles of Perceived Organizational Support and Sustainable Organizational Reputation. *Sustainability* 13: 12363. [\[CrossRef\]](#)
- Hu, Li-tze, and Peter M. Bentler. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal* 6: 1–55. [\[CrossRef\]](#)
- Huang, Stanley Y. B., Chih-Wen Ting, and Ming-Way Li. 2021. The Effects of Green Transformational Leadership on Adoption of Environmentally Proactive Strategies: The Mediating Role of Green Engagement. *Sustainability* 13: 3366. [\[CrossRef\]](#)
- Ikram, Khalid. 2007. *The Egyptian Economy, 1952–2000: Performance Policies and Issues*. Milton Park: Routledge.
- Jia, Jianfeng, Huanxin Liu, Tachia Chin, and Dongqing Hu. 2018. The Continuous Mediating Effects of GHRM on Employees' Green Passion via Transformational Leadership and Green Creativity. *Sustainability* 10: 3237. [\[CrossRef\]](#)

- Jiang, Jing, and Baiyin Yang. 2015. Roles of Creative Process Engagement and Leader–Member Exchange in Critical Thinking and Employee Creativity. *Social Behavior and Personality: An International Journal* 43: 1217–31. [\[CrossRef\]](#)
- Karatepe, Osman M., Hungchen Hsieh, and Mohammed Aboramadan. 2022. The effects of green human resource management and perceived organizational support for the environment on green and non-green hotel employee outcomes. *International Journal of Hospitality Management* 103: 103202. [\[CrossRef\]](#)
- Kim, Yong Joong, Woo Gon Kim, Hyung-Min Choi, and Kullada Phetvaroon. 2019. The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. *International Journal of Hospitality Management* 76: 83–93. [\[CrossRef\]](#)
- Kusi, Manita, Fuqiang Zhao, and Dinesh Sukamani. 2021. Impact of perceived organizational support and green transformational leadership on sustainable organizational performance: A SEM approach. *Business Process Management Journal* 27: 1373–90. [\[CrossRef\]](#)
- Lamm, Eric, Jennifer Tosti-Kharas, and Cynthia E. King. 2015. Empowering Employee Sustainability: Perceived Organizational Support Toward the Environment. *Journal of Business Ethics* 128: 207–20. [\[CrossRef\]](#)
- Le, Phong Ba, and Hui Lei. 2018. The mediating role of trust in stimulating the relationship between transformational leadership and knowledge sharing processes. *Journal of Knowledge Management* 22: 521–37. [\[CrossRef\]](#)
- Li, Wenjing, Tahseen Ahmed Bhutto, Wang Xuhui, Qamaruddin Maitlo, Abaid Ullah Zafar, and Niaz Ahmed Bhutto. 2020. Unlocking employees' green creativity: The effects of green transformational leadership, green intrinsic, and extrinsic motivation. *Journal of Cleaner Production* 255: 120229. [\[CrossRef\]](#)
- Lin, Hsiu-Fen. 2006. Impact of organizational support on organizational intention to facilitate knowledge sharing. *Knowledge Management Research & Practice* 4: 26–35. [\[CrossRef\]](#)
- Liu, Xiaoguang, Zhihao Wang, Wei Li, Guomin Li, and Yingyue Zhang. 2019. Mechanisms of public education influencing waste classification willingness of urban residents. *Resources, Conservation and Recycling* 149: 381–90. [\[CrossRef\]](#)
- Lu, Hui, Xia Liu, Hong Chen, Ruyin Long, and Ting Yue. 2017. Who contributed to "corporation green" in China? A view of public and private-sphere pro-environmental behavior among employees. *Resources, Conservation and Recycling* 120: 166–75. [\[CrossRef\]](#)
- Luu, Tuan Trong. 2017. CSR and organizational citizenship behavior for the environment in hotel industry. *International Journal of Contemporary Hospitality Management* 29: 2867–900. [\[CrossRef\]](#)
- Luu, Tuan Trong. 2018. Employees' green recovery performance: The roles of green HR practices and serving culture. *Journal of Sustainable Tourism* 26: 1308–24. [\[CrossRef\]](#)
- Mansoor, Adil, Muhammad Farrukh, Jong-Keon Lee, and Sarwat Jahan. 2021. Stimulation of Employees' Green Creativity through Green Transformational Leadership and Management Initiatives. *Sustainability* 13: 7844. [\[CrossRef\]](#)
- Mittal, Swati, and Rajib Lochan Dhar. 2016. Effect of green transformational leadership on green creativity: A study of tourist hotels. *Tourism Management* 57: 118–27. [\[CrossRef\]](#)
- Naudé, Wim. 2010. The Global Economic Crisis and Developing Countries: Effects, Responses and Options for Sustainable Recovery. *Poverty & Public Policy* 2: 211–35. [\[CrossRef\]](#)
- Ng, Thomas W. H. 2017. Transformational leadership and performance outcomes: Analyses of multiple mediation pathways. *The Leadership Quarterly* 28: 385–417. [\[CrossRef\]](#)
- Norton, Thomas A., Stacey L. Parker, Hannes Zacher, and Neal M. Ashkanasy. 2015. Employee Green Behavior: A Theoretical Framework, Multilevel Review, and Future Research Agenda. *Organization & Environment* 28: 103–25. [\[CrossRef\]](#)
- Park, Joohyung, and Sejin Ha. 2014. Understanding Consumer Recycling Behavior: Combining the Theory of Planned Behavior and the Norm Activation Model. *Family and Consumer Sciences Research Journal* 42: 278–91. [\[CrossRef\]](#)
- Pei, Zhijun. 2019. Roles of neighborhood ties, community attachment and local identity in residents' household waste recycling intention. *Journal of Cleaner Production* 241: 118217. [\[CrossRef\]](#)
- Pinzone, Marta, Marco Guerci, Emanuele Lettieri, and Donald Huisingh. 2019. Effects of 'green' training on pro-environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector. *Journal of Cleaner Production* 226: 221–32. [\[CrossRef\]](#)
- Podsakoff, Philip M., Scott B. MacKenzie, Jeong-Yeon Lee, and Nathan P. Podsakoff. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88: 879–903. [\[CrossRef\]](#) [\[PubMed\]](#)
- Popescu, Sorin, Diana Rusu, Mihai Dragomir, Daniela Popescu, and Șerban Nedelcu. 2019. Competitive Development Tools in Identifying Efficient Educational Interventions for Improving Pro-Environmental and Recycling Behavior. *International Journal of Environmental Research and Public Health* 17: 156. [\[CrossRef\]](#)
- Prasongsukarn, Kriengsin, and Paul G. Patterson. 2012. An extended service recovery model: The moderating impact of temporal sequence of events. *Journal of Services Marketing* 26: 510–20. [\[CrossRef\]](#)
- Ramayah, T., Jason Wai Chow Lee, and Shuwen Lim. 2012. Sustaining the environment through recycling: An empirical study. *Journal of Environmental Management* 102: 141–47. [\[CrossRef\]](#)
- Reiter-Palmon, Roni, and Jody J. Illies. 2004. Leadership and creativity: Understanding leadership from a creative problem-solving perspective. *The Leadership Quarterly* 15: 55–77. [\[CrossRef\]](#)
- Rhoades, Linda, and Robert Eisenberger. 2002. Perceived organizational support: A review of the literature. *Journal of Applied Psychology* 87: 698–714. [\[CrossRef\]](#)

- Robertson, Jennifer L., and Julian Barling. 2013. Greening organizations through leaders' influence on employees' pro-environmental behaviors. *Journal of Organizational Behavior* 34: 176–94. [CrossRef]
- Rubel, Mohammad Rabiul Basher, Daisy Mui Hung Kee, and Nadia Newaz Rimi. 2021. The influence of green HRM practices on green service behaviors: The mediating effect of green knowledge sharing. *Employee Relations: The International Journal* 43: 996–1015. [CrossRef]
- Safari, Ali, Reza Salehzadeh, Razieh Panahi, and Samaneh Abolghasemian. 2018. Multiple pathways linking environmental knowledge and awareness to employees' green behavior. *Corporate Governance: The International Journal of Business in Society* 18: 81–103. [CrossRef]
- Scott, Susanne G., and Reginald A. Bruce. 1994. Determinants of Innovative Behavior: A Path Model of Individual Innovation in the Workplace. *Academy of Management Journal* 37: 580–607. [CrossRef]
- Singh, Nripendra, David Cranage, and Seoki Lee. 2014. Green strategies for hotels: Estimation of recycling benefits. *International Journal of Hospitality Management* 43: 13–22. [CrossRef]
- Singh, Sanjay Kumar, Manlio Del Giudice, Roberto Chierici, and Domenico Graziano. 2020. Green innovation and environmental performance: The role of green transformational leadership and green human resource management. *Technological Forecasting and Social Change* 150: 119762. [CrossRef]
- Sroufe, Robert. 2017. Integration and organizational change towards sustainability. *Journal of Cleaner Production* 162: 315–29. [CrossRef]
- Stratton, Samuel J. 2021. Population Research: Convenience Sampling Strategies. *Prehospital and Disaster Medicine* 36: 373–74. [CrossRef] [PubMed]
- Suifan, Taghrid S., Ayman Bahjat Abdallah, and Marwa Al Janini. 2018. The impact of transformational leadership on employees' creativity. *Management Research Review* 41: 113–32. [CrossRef]
- Suliman, Mohamed Ahmed, Ahmed Hassan Abdou, Moatazbellah Farid Ibrahim, Dayal Ali Waheer Al-Khaldy, Ashraf Mohamed Anas, Wael Mohamed Mahmoud Alrefae, and Wagih Salama. 2023. Impact of Green Transformational Leadership on Employees' Environmental Performance in the Hotel Industry Context: Does Green Work Engagement Matter? *Sustainability* 15: 2690. [CrossRef]
- The Egypt Hospitality Industry Report. 2024. Egypt Hospitality Industry Size & Share Analysis—Growth Trends & Forecasts (2024–2029). Available online: <https://www.mordorintelligence.com/industry-reports/hospitality-industry-in-egypt> (accessed on 17 May 2024).
- The Ministry of Tourism and Antiquities. 2024. Hotel Directory—Cairo Governorate. Available online: <https://mota.gov.eg/ar/%D8%A7%D9%84%D8%B4%D8%B1%D9%83%D8%A7%D8%AA-%D9%88%D8%A7%D9%84%D9%85%D9%86%D8%B4%D8%A2%D8%AA-%D8%A7%D9%84%D9%81%D9%86%D8%AF%D9%82%D9%8A%D8%A9-%D9%88%D8%A7%D9%84%D8%B3%D9%8A%D8%A7%D8%AD%D9%8A%D8%A9/%D8%AF%D9%84%D9%8A%D9%84-%D8%A7%D9%84%D9%85%D9%86%D8%B4%D8%A2%D8%AA-%D8%A7%D9%84%D9%81%D9%86%D8%AF%D9%82%D9%8A%D8%A9-%D9%88%D8%A7%D9%84%D9%85%D8%AD%D8%A7%D9%84-%D9%88%D8%A7%D9%84%D8%A3%D9%86%D8%B4%D8%B7%D8%A9-%D8%A7%D9%84%D8%B3%D9%8A%D8%A7%D8%AD%D9%8A%D8%A9/%D8%AF%D9%84%D9%8A%D9%84-%D8%A7%D9%84%D9%85%D9%86%D8%B4%D8%A2%D8%AA-%D8%A7%D9%84%D9%81%D9%86%D8%AF%D9%82%D9%8A%D8%A9-%D9%85%D8%AD%D8%A7%D9%81%D8%B8%D8%A9-%D8%A7%D9%84%D9%82%D8%A7%D9%87%D8%B1%D8%A9/> (accessed on 17 May 2024).
- Tucker, Ledyard R., and Charles Lewis. 1973. A reliability coefficient for maximum likelihood factor analysis. *Psychometrika* 38: 1–10. [CrossRef]
- Vähätiitto, Jenni. 2010. Environmental Quality Management in Hospitality Industry—Case Hotel K5 Levi. Master's thesis, Aalto University, Espoo, Finland.
- Wan, Calvin, Geoffrey Qiping Shen, and Stella Choi. 2021. The place-based approach to recycling intention: Integrating place attachment into the extended theory of planned behavior. *Resources, Conservation and Recycling* 169: 105549. [CrossRef]
- Williams, I. D., and J. Kelly. 2003. Green waste collection and the public's recycling behaviour in the Borough of Wyre, England. *Resources, Conservation and Recycling* 38: 139–59. [CrossRef]
- Yavas, Ugur, Osman M. Karatepe, and Emin Babakus. 2010. Relative efficacy of organizational support and personality traits in predicting service recovery and job performances: A study of frontline employees in Turkey. *Tourism Review* 65: 70–83. [CrossRef]
- Yuriev, Alexander, Mehdi Dahmen, Pascal Paillé, Olivier Boiral, and Laurence Guillaumie. 2020. Pro-environmental behaviors through the lens of the theory of planned behavior: A scoping review. *Resources, Conservation and Recycling* 155: 104660. [CrossRef]
- Zacher, Hannes, Cort W. Rudolph, and Ian M. Katz. 2023. Employee Green Behavior as the Core of Environmentally Sustainable Organizations. *Annual Review of Organizational Psychology and Organizational Behavior* 10: 465–94. [CrossRef]
- Zemtsov, Stepan. 2020. New technologies, potential unemployment and 'nescience economy' during and after the 2020 economic crisis. *Regional Science Policy & Practice* 12: 723–43. [CrossRef]
- Zhang, Si, Ziqian Xia, Chao Zhang, Xi Tian, and Jinliang Xie. 2023. Green illusions in self-reporting? Reassessing the intention-behavior gap in waste recycling behaviors. *Waste Management* 166: 171–80. [CrossRef] [PubMed]
- Zhang, Tianpei, Haonan Zhang, and Ziyun Zhao. 2024. Studying green climate nexus with green work engagement: How are environmental sustainability and personality traits important? *Environmental Science and Pollution Research* 31: 11684–97. [CrossRef] [PubMed]

- Zhang, Wengang, Feng Xu, and Xuefeng Wang. 2020. How Green Transformational Leadership Affects Green Creativity: Creative Process Engagement as Intermediary Bond and Green Innovation Strategy as Boundary Spanner. *Sustainability* 12: 3841. [[CrossRef](#)]
- Zhou, Shunyi, Dapeng Zhang, Chan Lyu, and Hongfeng Zhang. 2018. Does Seeing “Mind Acts Upon Mind” Affect Green Psychological Climate and Green Product Development Performance? The Role of Matching Between Green Transformational Leadership and Individual Green Values. *Sustainability* 10: 3206. [[CrossRef](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.